



Untitled  
SEQUENCE LISTING

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TECH CENTER 1600/2900.

<110> Massague et al.

<120> ISOLATED p27 PROTEIN AND METHODS FOR ITS PRODUCTION AND USE

<130> GPCI-P08-079

<140> 09/865018

<141> 2001-05-24

<150> 08/854039

<151> 1997-05-09

<160> 27

<170> PatentIn version 3.1

<210> 1

<211> 597

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(597)

<223>

<400> 1

atg tca aac gtg cga gtg tct aac ggg agc cct agc ctg gag cgg atg  
48

Met Ser Asn Val Arg Val Ser Asn Gly Ser Pro Ser Leu Glu Arg Met

1

5

10

15

gac gcc agg cag gcg gag cac ccc aag ccc tcg gcc tgc agg aac ctc  
96

Asp Ala Arg Gln Ala Glu His Pro Lys Pro Ser Ala Cys Arg Asn Leu

20

25

30

ttc gcc cgg gtg gac cac gaa gag tta acc cgg gac ttg gag aag cac  
44

Phe Gly Pro Val Asp His Glu Glu Leu Thr Arg Asp Leu Glu Lys His

1

Untitled

35

40

45

tgc aga gac atg gaa gag gcg agc cag cgc aag tgg aat ttc gat ttt 1  
92

Cys Arg Asp Met Glu Glu Ala Ser Gln Arg Lys Trp Asn Phe Asp Phe

50

55

60

cag aat cac aaa ccc cta gag ggc aag tac gag tgg caa gag gtg gag 2  
40

Gln Asn His Lys Pro Leu Glu Gly Lys Tyr Glu Trp Gln Glu Val Glu

65

70

75

80

aag ggc agc ttg ccc gag ttc tac tac aga ccc ccg cgg ccc ccc aaa 2  
38

Lys Gly Ser Leu Pro Glu Phe Tyr Tyr Arg Pro Pro Arg Pro Pro Lys

85

90

95

ggt gcc tgc aag gtg ccg gcg cag gag agc cag gat gtc agc ggg agc 3  
36

Gly Ala Cys Lys Val Pro Ala Gln Glu Ser Gln Asp Val Ser Gly Ser

100

105

110

cgc ccg gcg gcg cct tta att ggg gct ccg gct aac tct gag gac acg 3  
84

Arg Pro Ala Ala Pro Leu Ile Gly Ala Pro Ala Asn Ser Glu Asp Thr

115

120

125

cat ttg gtg gac cca aag act gat ccg tgg gac agc cag acg ggg tta 4  
32

His Leu Val Asp Pro Lys Thr Asp Pro Ser Asp Ser Gln Thr Gly Leu

130

135

140

gcg gag caa tgc gca gga ata agg aag cga cct gca acc gag gat tct 4  
80

Ala Glu Gln Cys Ala Gly Ile Arg Lys Arg Pro Ala Thr Asp Asp Ser

Untitled

145	150	155	160	
tct act caa aac aaa aga gcc aac aga aca gaa gaa aat gtt tca gac				5
28				
Ser Thr Gln Asn Lys Arg Ala Asn Arg Thr Glu Glu Asn Val Ser Asp				
	165	170	175	
ggg tcc cca aat gcc ggt tct gtg gag cag acg ccc aag aag cct ggc				5
76				
Gly Ser Pro Asn Ala Gly Ser Val Glu Gln Thr Pro Lys Lys Pro Gly				
	180	185	190	
ctc aga aga cgt caa acg taa				5
97				
Leu Arg Arg Arg Gln Thr				
	195			
<210> 2				
<211> 198				
<212> PRT				
<213> Homo sapiens				
<400> 2				
Met Ser Asn Val Arg Val Ser Asn Gly Ser Pro Ser Leu Glu Arg Met				
1	5	10	15	
Asp Ala Arg Gln Ala Glu His Pro Lys Pro Ser Ala Cys Arg Asn Leu				
	20	25	30	
Phe Gly Pro Val Asp His Glu Glu Leu Thr Arg Asp Leu Glu Lys His				
	35	40	45	
Cys Arg Asp Met Glu Glu Ala Ser Gln Arg Lys Trp Asn Phe Asp Phe				
	50	55	60	

Untitled

Gln Asn His Lys Pro Leu Glu Gly Lys Tyr Glu Trp Gln Glu Val Glu  
65 70 75 80

Lys Gly Ser Leu Pro Glu Phe Tyr Tyr Arg Pro Pro Arg Pro Pro Lys  
35 90 95

Gly Ala Cys Lys Val Pro Ala Gln Glu Ser Gln Asp Val Ser Gly Ser  
100 105 110

Arg Pro Ala Ala Pro Leu Ile Gly Ala Pro Ala Asn Ser Glu Asp Thr  
115 120 125

His Leu Val Asp Pro Lys Thr Asp Pro Ser Asp Ser Gln Thr Gly Leu  
130 135 140

Ala Glu Gln Cys Ala Gly Ile Arg Lys Arg Pro Ala Thr Asp Asp Ser  
145 150 155 160

Ser Thr Gln Asn Lys Arg Ala Asn Arg Thr Glu Glu Asn Val Ser Asp  
165 170 175

Gly Ser Pro Asn Ala Gly Ser Val Glu Gln Thr Pro Lys Lys Pro Gly  
180 185 190

Leu Arg Arg Arg Gln Thr  
195

<210> 3  
<211> 594  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1)..(594)  
<223>

<400> 3  
atg tca aac gta aga gtg tct aac ggg agc ccg agc ctg gag cgg atg  
48

Untitled

Met Ser Asn Val Arg Val Ser Asn Gly Ser Pro Ser Leu Glu Arg Met

1 5 10 15

gac gcc aga caa ggc gat cac ccc aag cct tcc gcc tgc aga aat ctc  
96

Asp Ala Arg Gln Ala Asp His Pro Lys Pro Ser Ala Cys Arg Asn Leu

20 25 30

ttc ggc ccg gtc aat cat gaa gaa cta acc cgg gac ttg gag aag cac  
44

Phe Gly Pro Val Asn His Glu Glu Leu Thr Arg Asp Leu Glu Lys His

35 40 45

tgc cgg gat atg gaa gaa ggc agt cag cgc aag tgg aat ttc gac ttt  
92

Cys Arg Asp Met Glu Glu Ala Ser Gln Arg Lys Trp Asn Phe Asp Phe

50 55 60

cag aat cat aag ccc ctg gag ggc aga tac gaa tgg cag gag gtg gag  
40

Gln Asn His Lys Pro Leu Glu Gly Arg Tyr Glu Trp Gln Glu Val Glu

65 70 75 80

agg ggc agc ttg ccc gag ttc tac tac agg ccc ccg cgc ccc ccc aag  
83

Arg Gly Ser Leu Pro Glu Phe Tyr Tyr Arg Pro Pro Arg Pro Pro Lys

85 90 95

agc gcc tgc aag gtg ctg ggc cag gag agc cag gat gtc agc ggg agc  
36

Ser Ala Cys Lys Val Leu Ala Gln Glu Ser Gln Asp Val Ser Gly Ser

100 105 110

cgc cag ggc gtg cct tta att ggg tct cag gca aac tct gag gac cgg

1

1

2

2

3

3

# Untitled

84

Arg Gln Ala Val Pro Leu Ile Gly Ser Gln Ala Asn Ser Glu Asp Arg

115

120

125

cat ttg gtg gac caa atg cct gac tgg tca gac aat cag gct ggg tta  
32

4

His Leu Val Asp Gln Met Pro Asp Ser Ser Asp Asn Gln Ala Gly Leu

130

135

140

gag gag cag tgt cca ggg atg agg aag cga cct gct gca gaa gat tct  
80

4

Ala Glu Gln Cys Pro Gly Met Arg Lys Arg Pro Ala Ala Glu Asp Ser

145

150

155

160

tct tgg caa aac aaa agg gcc aac aga aca gaa gaa aat gtt tca gac  
128

5

Ser Ser Gln Asn Lys Arg Ala Asn Arg Thr Glu Glu Asn Val Ser Asp

165

170

175

ggg tcc ccg aac gct ggc act gtg gag cag acg ccc aag aag ccc ggc  
76

5

Gly Ser Pro Asn Ala Gly Thr Val Glu Gln Thr Pro Lys Lys Pro Gly

180

185

190

ctt cga cgc cag acg taa  
94

5

Leu Arg Arg Gln Thr

195

<210> 4

<211> 197

<212> PRT

<213> Mus musculus

<400> 4

Untitled

Met Ser Asn Val Arg Val Ser Asn Gly Ser Pro Ser Leu Glu Arg Met  
1 5 10 15

Asp Ala Arg Gln Ala Asp His Pro Lys Pro Ser Ala Cys Arg Asn Leu  
20 25 30

Phe Gly Pro Val Asn His Glu Glu Leu Thr Arg Asp Leu Glu Lys His  
35 40 45

Cys Arg Asp Met Glu Glu Ala Ser Gln Arg Lys Trp Asn Phe Asp Phe  
50 55 60

Gln Asn His Lys Pro Leu Glu Gly Arg Tyr Glu Trp Gln Glu Val Glu  
65 70 75 80

Arg Gly Ser Leu Pro Glu Phe Tyr Tyr Arg Pro Pro Arg Pro Pro Lys  
85 90 95

Ser Ala Cys Lys Val Leu Ala Gln Glu Ser Gln Asp Val Ser Gly Ser  
100 105 110

Arg Gln Ala Val Pro Leu Ile Gly Ser Gln Ala Asn Ser Glu Asp Arg  
115 120 125

His Leu Val Asp Gln Met Pro Asp Ser Ser Asp Asn Gln Ala Gly Leu  
130 135 140

Ala Glu Gln Cys Pro Gly Met Arg Lys Arg Pro Ala Ala Glu Asp Ser  
145 150 155 160

Ser Ser Gln Asn Lys Arg Ala Asn Arg Thr Glu Glu Asn Val Ser Asp  
165 170 175

Gly Ser Pro Asn Ala Gly Thr Val Glu Gln Thr Pro Lys Lys Pro Gly  
180 185 190

# Untitled

Leu Arg Arg Gln Thr  
195

<210> 5  
<211> 534  
<212> DNA  
<213> Mustela vison

<220>  
<221> CDS  
<222> (1)..(534)  
<223>

<400> 5  
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48  
Met Ser Asn Val Arg Val Ser Asn Gly Ser Pro Ser Leu Glu Arg Met  
1 5 10 15

gac gcc aga cag gcg gag tac ccc aag ccc tcc gcc tgc aga aac ctg  
96  
Asp Ala Arg Gln Ala Glu Tyr Pro Lys Pro Ser Ala Cys Arg Asn Leu  
20 25 30

ttc gcc cgg gtc aac cac gaa gag ctg acc cgg gac ttg gag aag cac 1  
44  
Phe Gly Pro Val Asn His Glu Glu Leu Thr Arg Asp Leu Glu Lys His  
35 40 45

cgc aga gac atg gaa gag gca agc cag cgc aag tgg aat ttt gat ttc 1  
92  
Arg Arg Asp Met Glu Glu Ala Ser Gln Arg Lys Trp Asn Phe Asp Phe  
50 55 60

cag aat cac aag ccc ctg gag ggc aaa tac gag tgg cag gag gtg gag 2  
40  
Gln Asn His Lys Pro Leu Glu Gly Lys Tyr Glu Trp Gln Glu Val Glu  
65 70 75 80



# Untitled

aag ggc agc ttg ccg gag ttc tac tac aga ccc ccg cgg cca ccc aaa 2  
88

Lys Gly Ser Leu Pro Glu Phe Tyr Tyr Arg Pro Pro Arg Pro Pro Lys

85

90

95

ggc gcc tgc aag gtg ccg gcg cag gag agc cag gac gtc agc ggg acc 3  
36

Gly Ala Cys Lys Val Pro Ala Gln Glu Ser Gln Asp Val Ser Gly Thr

100

105

110

cgg cag gcc gtg cct tta atg ggg tct cag gca aac tca gag gac aca 3  
84

Arg Gln Ala Val Pro Leu Met Gly Ser Gln Ala Asn Ser Glu Asp Thr

115

120

125

cac ttg gta gac caa aag act gac acg gcg gac aac cag gct ggc tta 4  
32

His Leu Val Asp Gln Lys Thr Asp Thr Ala Asp Asn Gln Ala Gly Leu

130

135

140

gcg gag cag tgc act ggg atc agg aag cga ccg gcc aca gac gat tcc 4  
80

Ala Glu Gln Cys Thr Gly Ile Arg Lys Arg Pro Ala Thr Asp Asp Ser

145

150

155

160

tct cct caa aac aaa aga gcc aac aga aca gaa gaa aat gtc tca gac 5  
28

Ser Pro Gln Asn Lys Arg Ala Asn Arg Thr Glu Glu Asn Val Ser Asp

165

170

175

ggt tcc 5  
34

Gly Ser

# Untitled

<210> 6  
 <211> 178  
 <212> PRT  
 <213> Mustela vison

<400> 6

Met	Ser	Asn	Val	Arg	Val	Ser	Asn	Gly	Ser	Pro	Ser	Leu	Glu	Arg	Met
1				5					10					15	

Asp	Ala	Arg	Gln	Ala	Glu	Tyr	Pro	Lys	Pro	Ser	Ala	Cys	Arg	Asn	Leu
			20					25					30		

Phe	Gly	Pro	Val	Asn	His	Glu	Glu	Leu	Thr	Arg	Asp	Leu	Glu	Lys	His
		35						40				45			

Arg	Arg	Asp	Met	Glu	Glu	Ala	Ser	Gln	Arg	Lys	Trp	Asn	Phe	Asp	Phe
		50				55					60				

Gln	Asn	His	Lys	Pro	Leu	Glu	Gly	Lys	Tyr	Glu	Trp	Gln	Glu	Val	Glu
65					70					75					80

Lys	Gly	Ser	Leu	Pro	Glu	Phe	Tyr	Tyr	Arg	Pro	Pro	Arg	Pro	Pro	Lys
				85					90					95	

Gly	Ala	Cys	Lys	Val	Pro	Ala	Gln	Glu	Ser	Gln	Asp	Val	Ser	Gly	Thr
			100					105						110	

Arg	Gln	Ala	Val	Pro	Leu	Met	Gly	Ser	Gln	Ala	Asn	Ser	Glu	Asp	Thr
		115					120					125			

His	Leu	Val	Asp	Gln	Lys	Thr	Asp	Thr	Ala	Asp	Asn	Gln	Ala	Gly	Leu
		130				135					140				

Ala	Glu	Gln	Cys	Thr	Gly	Ile	Arg	Lys	Arg	Pro	Ala	Thr	Asp	Asp	Ser
145					150					155					160

# Untitled

Ser	Pro	Gln	Asn	Lys	Arg	Ala	Asn	Arg	Thr	Glu	Glu	Asn	Val	Ser	Asp
				165					170					175	

Gly Ser

<210> 7  
 <211> 10  
 <212> PRT  
 <213> Mustela vison

<400> 7

Asn	Leu	Tyr	Pro	Leu	Thr	Asn	Tyr	Thr	Phe
1				5					10

<210> 8  
 <211> 13  
 <212> PRT  
 <213> Mustela vison

<400> 8

Thr	Asp	Thr	Ala	Asp	Asn	Gln	Ala	Gly	Leu	Ala	Glu	Gln
1				5					10			

<210> 9  
 <211> 10  
 <212> PRT  
 <213> Mustela vison

<400> 9

Gln	Ala	Val	Pro	Leu	Met	Gly	Pro	Gln	Glu
1				5					10

<210> 10  
 <211> 12  
 <212> PRT  
 <213> Mustela vison

<400> 10

Leu Pro Glu Phe Tyr Tyr Arg Pro Pro Arg Pro Pro

1 5 10

<210> 11  
 <211> 6  
 <212> PRT  
 <213> Mustela vison

<400> 11

Tyr Glu Trp Gln Glu Val  
 1 5

<210> 12  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Sense primer

<220>  
 <221> misc\_feature  
 <222> (1)..(20)  
 <223> n=a, c, g, or t

<400> 12  
 acngayacng ayaaycargc  
 10

<210> 13  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Antisense primer

<220>  
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<223> n=a, c, g, or t

<400> 13  
 ngcytgrttr tengcgrtrt cngt  
 24

Untitled

<210> 14  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
<220>  
<223> Sense primer

<220>  
<221> misc\_feature  
<222> (1)..(20)  
<223> n=a, c, g, or t

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cargcngtnc cncctnatggg  
20

<210> 15  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Sense primer

<220>  
<221> misc\_feature  
<222> (1)..(20)  
<223> n=a, c, g, or t

<400> 15  
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<210> 16  
<211> 21  
<212> DNA  
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<220>  
<223> Antisense primer

<220>  
<221> misc\_feature  
<222> (1)..(21)  
<223> n=a, c, g, or t

<400> 16  
ncccatnagn ggnacngcgt g

21

<210> 17  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
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<220>  
 <221> misc\_feature  
 <222> (1)..(21)  
 <223> n=a, c, g, or t

<400> 17  
 ncccatyaan ggnacngcyt g  
 21

<210> 18  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Sense primer

<220>  
 <221> misc\_feature  
 <222> (3)..(3)  
 <223> n=a, c, g, or t

<400> 18  
 ccngarttyt aytaymg  
 17

<210> 19  
 <211> 17  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Antisense primer

<220>  
 <221> misc\_feature  
 <222> (1)..(15)  
 <223> n=a, c, g, or t

Untitled

<400> 19  
ckrtartara aytcnng  
17

<210> 20  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Sense primer

<400> 20  
taygartggc argargt  
17

<210> 21  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Antisense primer

<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> n=a, c, g, or t

<400> 21  
nacytcytgc caytcrt  
18

<210> 22  
<211> 6  
<212> PRT  
<213> Homo sapiens

<400> 22  
  
Leu Phe Gly Pro Val Asn  
1 5

<210> 23  
<211> 6  
<212> PRT  
<213> Homo sapiens

# Untitled

0400 - 23

Leu Ser Gln Pro Val Asn  
1 5

0210 - 24

0211 - 164

0212 - PRT

0213 - Homo sapiens

0400 - 24

Met Ser Glu Pro Ala Gly Asp Val Arg Gln Asn Pro Cys Gly Ser Lys  
1 5 10 15

Ala Cys Arg Arg Leu Phe Gly Pro Val Asp Ser Glu Gln Leu Ser Arg  
20 25 30

Asp Cys Asp Ala Leu Met Ala Gly Cys Ile Gln Glu Ala Arg Glu Arg  
35 40 45

Trp Asn Phe Asp Phe Val Thr Glu Thr Pro Leu Glu Gly Asp Phe Ala  
50 55 60

Trp Glu Arg Val Arg Gly Leu Gly Leu Pro Lys Leu Tyr Leu Pro Thr  
65 70 75 80

Gly Pro Arg Arg Gly Arg Asp Glu Leu Gly Gly Gly Arg Arg Pro Gly  
85 90 95

Thr Ser Pro Ala Leu Leu Gln Gly Thr Ala Glu Glu Asp His Val Asp  
100 105 110

Leu Ser Leu Ser Cys Thr Leu Val Pro Arg Ser Gly Glu Gln Ala Glu  
115 120 125

Gly Ser Pro Gly Gly Pro Gly Asp Ser Gln Gly Arg Lys Arg Arg Gln  
130 135 140

Thr Ser Met Thr Asp Phe Tyr His Ser Lys Arg Arg Leu Ile Phe Ser  
145 150 155 160

Lys Arg Lys Pro

0214 - 25

0215 - 6



Untitled

<212> PRT  
<213> Homo sapiens

<400> 25

Leu Phe Gly Pro Val Asp  
1 5

<210> 26  
<211> 13  
<212> PRT  
<213> Mammalian

<400> 26

Asn Leu Phe Gly Pro Val Asn His Glu Glu Leu Thr Arg  
1 5 10

<210> 27  
<211> 13  
<212> PRT  
<213> Homo sapiens

<400> 27

Asn Leu Phe Gly Pro Val Asp His Glu Glu Leu Thr Arg  
1 5 10